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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,663	10/31/2001	Yoon Shik Hong	2598/0J952	2438

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EXAMINER

DOAN, JENNIFER

ART UNIT PAPER NUMBER

2874

DATE MAILED: 06/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/002,663

Applicant(s)

HONG ET AL.

Examiner

Jennifer Doan

Art Unit

2874

-- The MAILING DATE of this c mmunication appears on the cover sheet with the corresp ndence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2003 .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2 and 6-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 9 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____ .

DETAILED ACTION

Specification

1. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 2 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Eu (U.S. Patent 6,222,656).

Regarding claim 2, Eu discloses (Figs. 5 and 7B) a path-converted variable optical attenuator comprising a transmitting fiber (50) for launching an optical signal through a transmitting core; a receiving fiber (58) for receiving the optical signal from the transmitting fiber through a receiving core; a mirror (66) having a reflector for obstructing the optical signal launched from the transmitting core of the transmitting fiber (50) from proceeding into the receiving core of the receiving fiber and being displaced in a direction allowing a portion of the optical signal of the transmitting fiber into the receiving fiber to attenuate the optical signal (Fig. 7B; abstract, lines 2-5; column 3, lines 2-5 and column 4, lines 27-31); wherein the mirror is linearly displaced in a direction perpendicular to an optical path between the transmitting fiber (50) and the receiving fiber (58), wherein the reflector of the mirror has an inclination (68) relative to the optical path, the optical signal launched from the transmitting fiber and reflected by the reflector of the mirror being reflected in a path (72) that does not coincide with the optical path between the transmitting fiber (50) and the receiving fiber (58) (abstract, lines 2-5; column 3, lines 2-5 and column 4, lines 27-31).

Regarding claim 8, wherein the mirror (54) is wedge shaped as shown in Fig. 5.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eu (as cited above).

Eu discloses all the limitations of the claimed invention except Eu does not teach an MEMS actuator for controlling the mirror to be linearly displaced in a direction perpendicular to an optical path between the transmitting fiber and the receiving fiber as recited in claim 7. However, the MEMS actuator is considered to be obvious, since it is commonly used in an optical communication system to make a mechanical movement. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Eu's device with a MEMS actuator for obtaining a better controlling of an optical signal.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eu (as cited above) in view of Aksyuk et al. (U.S. Patent 5,923,798).

Eu discloses all the limitations of the claimed invention except Eu does not teach a substrate arranged parallel to the transmitting fiber, receiving fiber and the mirror as recited in claim 6. However, the substrate arranged parallel to the transmitting fiber, receiving fiber and the mirror is well known in the art as taught by Aksyuk et al. Aksyuk et al. teach the substrate (16, Fig. 1) set parallel to the transmitting fiber, receiving fiber and the mirror (column 2, lines 48-64) to support and protect the optical device. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Eu's device with a substrate (accordance with the

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teaching of Aksyuk et al.). Doing so would give the optical device more supportive and protective.

Allowable Subject Matter

6. Claims 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose or reasonably suggest a path-converted variable optical attenuator comprising the transmitting fiber, receiving fiber and the mirror constituting a group, and the further transmitting fiber, further receiving fiber and further the mirror constituting a further group, the group and further group enabling attenuation of the optical signal and the further optical signal; and a semiconductor wafer arranged parallel to the group and the further group as recited in claim 9.

Claim 10 is dependent on the objected claim 9.

Response to Arguments

7. Applicants' arguments, see pages 5-7 of the remarks, filed 03/06/2003, with respect to the rejection(s) of claim(s) 1-5 under Aksyuk et al. (U.S. Patent 5,923,798) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Eu (U.S. Patent 6,222,656). This action is **NOT** made final.

Conclusion

8. Applicants' arguments with respect to claims 2 and 6-10 have been considered but are moot in view of the new ground(s) of rejection. This action is **not** made final.

9. Any inquiry concerning the merits of this communication should be directed to Examiner Jennifer Doan whose telephone number is (703) 308-6179. The examiner can normally be reached on Monday to Thursday from 6:30am to 4:00pm, first Friday off.

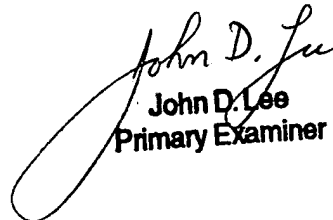
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick, can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JD

JD

May 22, 2003


John D. Lee
Primary Examiner